

Attorney Docket No. P113-US

IN THE CLAIMS

Please amend claims 127 and 130-133 as follows; and

Please cancel claims 23-62 and 75-126 without prejudice.

1. (previously presented) A spatial light modulator comprising:  
an array of micromirrors, each micromirror comprising a mirror plate having four predominant sides and being held on a substrate by a plurality of posts, wherein the four predominant sides define two diagonals, and wherein a line between any two of the plurality of posts is not coincident with either of the two diagonals; wherein the mirror plate is attached to a hinge that is supported by a post of the plurality of posts on the substrate; and wherein the mirror plate and hinge are separated by a gap in a direction perpendicular to the mirror plate when the mirror plate is parallel to the substrate.
2. (previously presented) The spatial light modulator of claim 1, wherein each mirror plate is in a shape of a rectangle, square, trapezoid or rhombus.
3. (previously presented) The spatial light modulator of claim 2, wherein the mirror plate is in a shape of square.
4. (original) The spatial light modulator of claim 1, wherein the plurality of posts consists of two posts.
5. (previously presented) The spatial light modulator of claim 1, wherein the substrate has four predominant sides that form a rectangular shape; and wherein each side of the mirror plate is at an angle of from 5° degrees to 25° degrees to the two sides of the rectangular substrate.
6. (previously presented) The spatial light modulator of claim 1, wherein the substrate has four predominant sides that form a rectangular shape; and wherein each side of the mirror plate is at an angle of from 10° degrees to 20° degrees to the two sides of the rectangular substrate.
7. (previously presented) The spatial light modulator of claim 1, wherein the mirror plate is attached to the hinge such that the mirror plate is capable of rotating along a rotation axis that is parallel to but offset from a diagonal of the mirror plate when viewed from the top of the substrate.

Attorney Docket No. P113-US

8. (original) The spatial light modulator of claim 7, wherein the micromirror further comprises:  
a first electrode placed proximate to the mirror plate such that a first electrical field is established between the first electrode and the mirror plate, and the mirror plate rotates relative to the substrate in a first rotation direction in response to the first electrical field.
9. (original) The spatial light modulator of claim 7, wherein the micromirror further comprises:  
a second electrode placed proximate to the mirror plate such that a second electrical field is established between the second electrode and the mirror plate, and the mirror plate rotates relative to the substrate in a second rotation direction in response to the first electrical field, wherein the second rotation direction is opposite to the first rotation direction.
10. (original) The spatial light modulator of claim 9, wherein the first and the second electrode are on a substrate other than the substrate to which the hinge support is connected.
11. (original) The spatial light modulator of claim 9, wherein the first electrode is on a substrate other than the substrate to which the hinge support is connected; and wherein the second electrode is on the substrate to which the hinge support is connected.
12. (original) The spatial light modulator of claim 11, wherein the second electrode is an electrode film on a surface of the substrate to which the hinge support is connected.
13. (original) The spatial light modulator of claim 7, wherein the micromirror further comprises:  
an extension plate connected to the mirror plate.
14. (original) The spatial light modulator of claim 13, wherein the extension plate is connected to the mirror plate via an extension-plate post and the extension plate defines a first gap between the extension and the mirror plate.
15. (original) The spatial light modulator of claim 13, wherein the extension plate is extended beyond the mirror plate and connected to the mirror plate via an extension-plate post; and wherein the extension plate defines a second gap between the extension plate and the substrate to which the hinge support is connected.

Attorney Docket No. P113-US

16. (original) The spatial light modulator of claim 13, wherein the extension plate is electrically conducting.
17. (original) The spatial light modulator of claim 13, wherein the extension plate is dielectric with a dielectric constant larger than 1.0.
18. (original) The spatial light modulator of claim 7, wherein the micromirror further comprises:  
a first stop for stopping the rotation of the mirror plate when the mirror plate rotates to an ON state angle.
19. (original) The spatial light modulator of claim 18, wherein the first stop is disposed on the hinge support.
20. (original) The spatial light modulator of claim 7, wherein the micromirror further comprises:  
a second stop for stopping the rotation of the mirror plate when the mirror plate rotates to an OFF state.
21. (original) The spatial light modulator of claim 20, wherein second stop is disposed on the hinge support.
22. (original) The spatial light modulator of claim 1, wherein the substrate has an anti-reflection film on a surface of the substrate.
- 23-62. (cancelled)
63. (previously presented) A spatial light modulator comprising:  
an array of micromirrors, each micromirror comprising a mirror plate held on a substrate by a plurality of posts, each mirror plate having four predominant sides; wherein the substrate is in a rectangular shape; and wherein each side of the mirror plate is at an angle of from 5° to 25° degrees to the two predominant sides of the rectangular substrate.
64. (previously presented) The spatial light modulator of claim 63, wherein the mirror plates are rectangular or square.

Attorney Docket No. P113-US

65. cancelled

66. (previously presented) The spatial light modulator of claim 63, wherein the substrate is in a rectangular shape; and wherein each side of the mirror plates is at an angle of from 10° degrees to 20° degrees to the two sides of the rectangular substrate.

67. (previously presented) The spatial light modulator of claim 63, wherein each micromirror further comprises:

a hinge support held by the posts on the substrate and connected to the substrate via the posts;

a hinge affixed to the hinge support; and

wherein the mirror plate is attached to the hinge such that the mirror plate is capable of rotating along a rotation axis that is parallel to but offset from a diagonal of the mirror plate when viewed from the top of the substrate.

68. (original) The spatial light modulator of claim 67, wherein the micromirror further comprises:

a first electrode placed proximate to the mirror plate such that a first electrical field is established between the first electrode and the mirror plate, and the mirror plate rotates relative to the substrate in a first rotation direction in response to the first electrical field; and

a second electrode placed proximate to the mirror plate such that a second electrical field is established between the second electrode and the mirror plate, and the mirror plate rotates relative to the substrate in a second rotation direction in response to the first electrical field, wherein the second rotation direction is opposite to the first rotation direction.

69. (original) The spatial light modulator of claim 68, wherein the second electrode is an electrode film on a surface of the substrate to which the hinge support is connected.

70. (original) The spatial light modulator of claim 67, wherein the micromirror further comprises:  
an extension plate connected to the mirror plate.

71. (original) The spatial light modulator of claim 70, wherein the extension plate is connected to the mirror plate via an extension-plate post and the extension plate defines a first gap between the extension and the mirror plate.

Attorney Docket No. P113-US

72. (original) The spatial light modulator of claim 70, wherein the extension plate is extended beyond the mirror plate and connected to the mirror plate via an extension-plate post; and wherein the extension plate defines a second gap between the extension plate and the substrate to which the hinge support is connected.

73. (original) The spatial light modulator of claim 63, wherein the micromirror further comprises: a first stop for stopping the rotation of the mirror plate when the mirror plate rotates to an ON state angle.

74. (original) The spatial light modulator of claim 63, wherein the micromirror further comprises: a second stop for stopping the rotation of the mirror plate when the mirror plate rotates to an OFF state.

75-126. (cancelled)

127. (currently amended) A spatial light modulator comprising:  
an array of micromirrors, each micromirror comprising a mirror plate that comprises four predominant sides and being held on the substrate by a plurality of posts, wherein the four predominant sides define two diagonals, and wherein a line connecting the centers of any two of the plurality of posts is not coincident with either of the two diagonals of the mirror plate; and  
wherein the mirror plate is attached to a hinge that is supported by at least one of the plurality of posts; and wherein the mirror plate and hinge are separated by a gap in a direction perpendicular to the substrate when the mirror plate is parallel to the substrate.

128. (previously presented) The spatial light modulator of claim 127, wherein the substrate is in a rectangular shape; and wherein each side of the mirror plate is at an angle of from 5° to 25° degrees to the two predominant sides of the rectangular substrate.

129. (cancelled)

130. (currently amended) The spatial light modulator of claim ~~127~~ 129, wherein the substrate is in a rectangular shape; and wherein each side of the mirror plate is at an angle of from 10° degrees to 20°

Attorney Docket No. P113-US

degrees to the two sides of the rectangular substrate.

131. (currently amended) The spatial light modulator of claim 127 ~~129~~, wherein the mirror plate is attached to the hinge such that the mirror plate is capable of rotating along a rotation axis that is parallel to but offset from a diagonal of the mirror plate when viewed from the top of the substrate.

132. (currently amended) The spatial light modulator of claim 127 ~~129~~, wherein the micromirror further comprises:

a first electrode placed proximate to the mirror plate such that a first electrical field is established between the first electrode and the mirror plate, and the mirror plate rotates relative to the substrate in a first rotation direction in response to the first electrical field; and

a second electrode placed proximate to the mirror plate such that a second electrical field is established between the second electrode and the mirror plate, and the mirror plate rotates relative to the substrate in a second rotation direction in response to the first electrical field, wherein the second rotation direction is opposite to the first rotation direction.

133. (currently amended) The spatial light modulator of claim 127 ~~129~~, wherein the micromirror further comprises:

an extension plate connected to the mirror plate.